

IDAHO DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

FEDERAL AID TO FISH AND WILDLIFE RESTORATION

Job Performance Report

Project F-73-R-3

Fishery Research



SUBPROJECT II: ANNUAL SURVEY OF THE SALMON AND STEELHEAD SPORT FISHERY HARVEST IN IDAHO

Study I. Estimates of the 1980 Harvest of Salmon and
Steelhead (Survey)

Period Covered: 1 March 1980 to 28 February 1981 by

David W. Ortmann
Fishery Research Supervisor

August, 1981

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JOB PERFORMANCE REPORT

State of Idaho

Name: ANNUAL SURVEY OF THE SALMON
AND STEELHEAD SPORT FISHERY
HARVEST IN IDAHO

Project No. F-73-R-3

Subproject No. II

Title: Estimates of the 1980 Harvest
of Salmon and Steelhead (Survey)

Study I

Period Covered: 1 March 1980 to 28 February 1981

ABSTRACT

The run of chinook salmon to Idaho in 1980 was below spawning and fishery requirements; therefore, no fishing season was provided,

In the steelhead fishery, an estimated 15,227 anglers fished 79,490 days and caught 9,103 steelhead.

Author:

David W. Ortmann
Fishery Research Supervisor

RECOMMENDATIONS

Continue the annual survey of salmon and steelhead harvests.

Field personnel should continue contacting anglers on the Snake, Salmon and Clearwater Rivers to insure accurate recording of stream sections on salmon and steelhead permits.

OBJECTIVES

To estimate the 1980 salmon and steelhead harvest in Idaho.

TECHNIQUES USED

Salmon Catch Survey

The spring chinook salmon run to Idaho in 1980 was the smallest ever recorded, with only 6,800 fish counted over Lower Granite Dam. Consequently, there was no open season for salmon fishing.

Steelhead Catch Survey

In the spring of 1980 the fishery was confined only to selected areas of the Snake and Salmon Rivers. The steelhead run into the Clearwater system was judged to be insufficient to support a fishery. On the Snake River, in an effort to avoid harvest of steelhead returning to the Grande Ronde River, the open area was confined to waters upstream of Dug Bar. On the Salmon River a maximum size limit of 28 inches was for the purpose of reducing harvest of group B steelhead returning to the South and Middle Forks of the Salmon River. Restricting the fishery to the mainstem below the Pahsimeroi River was intended to utilize hatchery-origin fish returning to the Pahsimeroi River (Fig. 1).

An improved outlook for the 1980-81 run led to a consumptive season for the fall, 1980, fishery on the upper Snake, Clearwater and Salmon Rivers. The fishery on the Snake River was, again, confined to waters upstream of Dug Bar (Fig. 2).

The steelhead catch survey was conducted in a manner comparable to past years. The survey began early in 1981, following the expiration of the 1980 calendar year steelhead fishing permits.

We established a random sample of 5,000 (29%) of the 17,261 steelhead permit holders. Questionnaires were sent to permit holders in the sample who had not previously returned their permits to the Department of Fish and Game. After about a one-month waiting period a second request for the return of information was sent to nonrespondents, which numbered 2,595.

Recipients of the questionnaires were asked to return their permits (Fig. 3) or a duplicate permit provided on the questionnaire (Figs. 4 and 5).

We also asked anglers to record the number of days they fished in each of the major river systems for steelhead. Informational maps were supplied with the questionnaire to assist anglers in accurately recording river sections from which fish were caught (Fig. 6).

Catches by date, stream, residency of angler and number of days fished were compiled by machine sorting.

FINDINGS

Steelhead Catch Estimates

A total of 17,261 steelhead permits were issued in 1980. About 88% of the questionnaire respondents indicated that they had actually fished for steelhead. Thirty-three percent of those actually fishing caught and killed at least one steelhead and the total catch was estimated at 9,103. The average catch for the year was 0.61 steelhead per angler (Table 1).

Anglers reported fishing an average of 5.2 days per person and an estimated 79,490 angler days were spent fishing for steelhead (Tables 2 and 3). Fishing pressure estimates by major stream areas were: Clearwater River drainage, 35,830 angler days (exclusive of catch-and-release fishing in special early fall season); Salmon River 38,031 angler days; and Snake River, 5,630 angler days (Tables 4, 5 and 6).

The catches by major stream area were: Clearwater drainage, 2,171; Salmon River, 6,431; and Snake River, 502 (Table 7).

Idaho residents took 82% of the statewide catch of steelhead (Table 8).

The 1980 fishery provided a much greater catch than in 1979, but was less than the 1977 and 1978 harvests (Table 9).

Harvest data by fish run year are reported in Table 10 for all runs since 1972-73.

IDAHO 1980 SPRING

Steelhead Seasons and Regulations

—SEASONS—

The following waters are open to fishing for steelhead for the periods listed beginning January 1, 1980 (all dates are inclusive). Waters not specifically designated below shall remain CLOSED to fishing for steelhead.

SNAKE RIVER — from Dug Bar upstream to 400 feet below Hells Canyon Dam OPEN to fishing for steelhead **January 1 to April 13.**

SALMON RIVER — from mouth upstream to Mackay Bar bridge OPEN to fishing for steelhead **January 1 to March 16.** From Mackay Bar bridge upstream to 400 yards downstream from the mouth of the Pahsimeroi River OPEN **January 1 to March 30.**

—LIMITS—

*Daily bag limit — Two (2) steelhead.
Possession limit — Two (2) steelhead.
Season limit — Six (6) steelhead. All steelhead 28 inches total length or larger must be immediately released unharmed back to the water.*

NOTE

The combined limit for any individual angler who may fish the Salmon and Snake Rivers shall not exceed two steelhead per day or in possession or six steelhead during the spring 1980 season.

Figure 1. Spring, 1980, steelhead seasons and regulations.

IDAHO 1980 FALL

Steelhead Seasons and Regulations

— SEASONS —

The following waters are open to fishing for steelhead for the periods listed beginning **September 27, 1980**. Waters not specifically designated below shall remain CLOSED to all fishing for steelhead.

CLEARWATER RIVER — Including Clearwater River arm of Lower Granite Reservoir upstream to the Clearwater River bridge at Orofino, **October 18 through December 31**, EXCEPT that fishing from the shoreline along the perimeter of Dworshak National Fish Hatchery is CLOSED FOR ALL SPECIES.

CLEARWATER RIVER, NORTH FORK — From its mouth upstream to 300 feet below Dworshak Dam, **October 18 through December 31**, EXCEPT that fishing from the shoreline along the perimeter of Dworshak National Fish Hatchery is CLOSED FOR ALL SPECIES.

SALMON RIVER — From its mouth upstream to the mouth of Redfish Lake Creek, **September 27 through December 31**.

SNAKE RIVER — From Dug Bar (approximately 8 miles upstream from the mouth of the Salmon River) upstream to 400 feet below Hells Canyon Dam, **September 27 through December 31**.

— LIMITS —

<i>Daily bag limit</i>	<i>Two steelhead</i>
<i>Possession limit</i>	<i>Two steelhead</i>
<i>Season limit</i>	<i>Four steelhead</i>

Special Catch-and-Release Season

CLEARWATER RIVER — Including Clearwater River arm of Lower Granite Reservoir upstream to the Clearwater River bridge at Orofino, **September 27 through October 17**, EXCEPT that fishing from the shoreline along the perimeter of Dworshak National Fish Hatchery is CLOSED FOR ALL SPECIES.

CLEARWATER RIVER, NORTH FORK — From the mouth upstream to 300 feet below Dworshak Dam, **September 27 through October 17**, EXCEPT that fishing from the shoreline along the perimeter of Dworshak National Fish Hatchery is CLOSED FOR ALL SPECIES.

SNAKE RIVER — Including Snake River arm of Lower Granite Reservoir upstream to Dug Bar, **September 27 through December 31**.

The special catch-and-release seasons require that all steelhead caught must be released immediately. Only single hook artificial lures or flies shall be used and hooks shall be barbless or have barbs bent closed.

Figure 2. Fall, 1980, steelhead seasons and regulations.

^{t1}The Snake River regulations were amended to include fishing from the Washington State line upstream to Three-Mile Inn (approximately 3 miles upstream from Asotin).

Issued by _____ Vendor No. _____

Fishing License Type and No. _____

IDAHO DEPARTMENT OF FISH AND GAME
STEELHEAD TROUT PERMIT—

Nº67-24153 **\$2.50**

This Permit Expires Dec. 31, **1980**

ENTER STEELHEAD CATCH BELOW.
(See instructions on reverse side.)

Date	Stream	Section
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

If no steelhead caught, please mark appropriate box before returning permit.

☐ DID NOT FISH FOR STEELHEAD TROUT
☒ FISHED FOR STEELHEAD, CAUGHT NONE

Complete and return this permit to
IDAHO DEPARTMENT OF FISH AND GAME
600 South Walnut St., Boise, Idaho 83707

Figure 3. Steelhead permit.

Dear Angler:

We are estimating the number of steelhead trout caught in Idaho in 1980. Your assistance in providing the following information is requested.

If you have already returned your 1980 Steelhead Trout Permit, please ignore this request.

If you have not already done so, please return your 1980 Steelhead Trout Permit in the envelope provided. Also, please take a minute to answer the following questions and return this letter.

How many days did you fish for steelhead in 1980 in these waters?

A. Clearwater River drainage: _____ days.
B. Salmon River: _____ days.
C. Snake River: _____ days.

ENTER STEELHEAD CATCH BELOW

If you have lost or wish to keep your permit, please enter your catch information at the right.

Date	Stream	Section
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

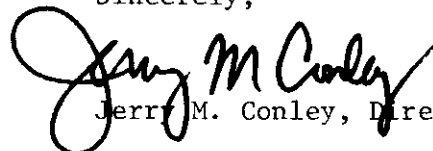
If you caught no steelhead, please mark one box at the right.

☐ I did not fish for steelhead.

☐ I fished, but caught none.

Thank you for your help.

Sincerely,


Jerry M. Conley, Director

EQUAL OPPORTUNITY EMPLOYER

Dear Angler:

To date we have not received your answer to our earlier request for your 1980 steel-head catch information. If you have already replied, our letters probably crossed in the mail so please ignore this request.

We are estimating the number of steelhead trout caught in Idaho in 1980. Your assistance in providing the following information is requested.

If you have not already done so, please return your 1980 Steelhead Trout Permit in the envelope provided. Also, please take a minute to answer the following questions and return this letter.

How many days did you fish for steelhead in 1980 in these waters?

A. Clearwater River drainage: _____ days.
B. Salmon River: _____ days.
C. Snake River: _____ days.

ENTER STEELHEAD CATCH BELOW

Date	Stream	Section
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

If you have lost or wish to keep your permit, please enter your catch information at the right.

If you caught no steelhead, please mark one box at the right.

☐

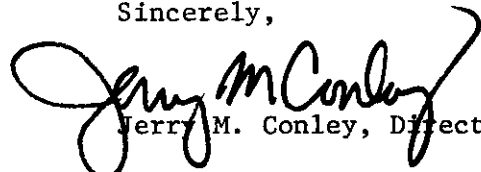
I did not fish for steelhead.

☐

I fished, but caught none.

Thank you for your help.

Sincerely,



Jerry M. Conley, Director

EQUAL OPPORTUNITY EMPLOYER

Figure 5. Steelhead catch questionnaire for 1980, second request.

Dear Salmon and Steelhead Angler:

To evaluate the benefits of Idaho's salmon and steelhead program we must estimate the salmon and steelhead sport catch by major river sections and tributaries.

Your cooperation, by recording salmon and steelhead catches by sections and tributaries, is necessary if the evaluation program is to succeed. Please record each fish caught by section listed below.

River Section Where Caught	Mark Permit As:
Snake River, Clearwater River to Salmon River	Lower Snake
Snake River, Salmon River to Hells Canyon Dam	Upper Snake
Clearwater River, mouth to North Fork of Clearwater	Lower Clearwater
Clearwater River, North Fork to South Fork of Clearwater	Upper Clearwater
Salmon River, Mouth to Whitebird Creek	Salmon - 1
Salmon River, Whitebird Creek to Little Salmon River	Salmon - 2
Salmon River, Little Salmon to South Fork of Salmon	Salmon - 3
Salmon River, South Fork to Middle Fork of Salmon	Salmon - 4
Salmon River, Middle Fork to Lemhi River	Salmon - 5
Salmon River, Lemhi River to Pahsimeroi River	Salmon - 6
Salmon River, Pahsimeroi River to East Fork of Salmon	Salmon - 7
Salmon River, above the East Fork	Salmon - 8

Sections listed above refer only to the main stem of each river. Continue to record catches from tributary streams as you have in past years. (Examples: North Fork of Salmon, Lemhi River, Selway River, Marsh Creek, North Fork of Clearwater, etc.)

Thanks again for your cooperation,
IDAHO DEPARTMENT OF FISH AND GAME
Joseph C. Greenley, Director

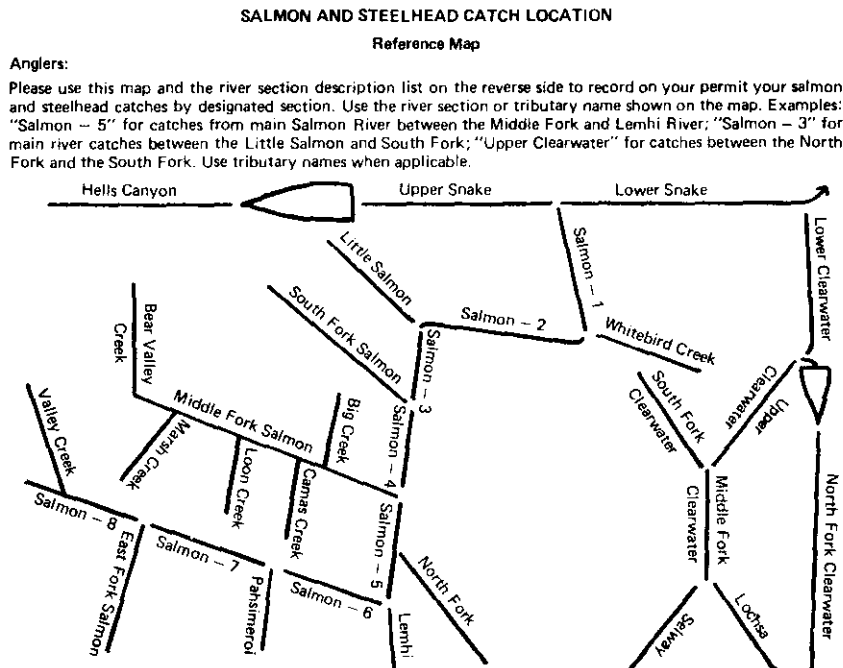


Figure 6. Steelhead catch location reference map. 10

Table 1. Questionnaire and permit data used to compute Idaho steelhead catch estimates for 1980.

1. 17,261 permits were issued.
2. Random sample size arbitrarily set at 5,000.
3. 3,424 permittees responded by returning permit and/or questionnaire.
4. 3,374 respondents supplied useable information.
5. Sample sizes and expanded estimates:

<u>Category</u>	<u>Number in sample</u>	<u>Percent of total</u>	<u>Expanded ^{1/} totals</u>
Did not fish	400	11.9	2,048
Fished for steelhead	(2,974)	(88.1)	(15,227)
a. Did not catch	1,971	58.4	10,092
b. Caught steelhead	<u>1,003</u>	<u>29.7</u>	<u>5,135</u>
Totals	3,374	100.0	17,275
Steelhead caught	1,807		9,103 ^{2/}
Steelhead per angler	0.61		

^{1/} Expansion factor: $\frac{\text{Total permittees}}{\text{Useable sample}} = \frac{17,261}{3,374} = 5.12$

^{2/} Adjusted from 9,252 to exclude obvious reporting errors.

Table 2. Questionnaire data used to compute fishing pressure for steelhead in 1980.

-
1. 2,456 respondents reported the number of days fished.
 2. 15,227 permittees are estimated to have actually fished.
 3. Expansion factor: $15,227 \div 2,456 = 6.20$
 4. 12,821 days fished reported by respondents.
 5. $12,821 \times 6.20 = 79,490$, total number of estimated days fished.
 6. $12,821 \div 2,456 = 5.2$, average number of days fished per angler.
-

Table 3. Estimated statewide fishing pressure for steelhead, 1980.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
0	2,048	0
1	2,778	2,778
2	3,360	6,721
3	2,294	6,882
4	1,432	5,729
5	1,190	5,952
6	769	4,613
7	415	2,908
8	453	3,621
9	143	1,283
10	831	8,308
11	122	1,228
12	229	2,753
13	37	484
14	118	1,649
15	260	3,906
16	62	992
17	37	632
18	50	893
19	12	236
20	248	4,960
21	25	521
22	50	1,091
23	6	143
24	19	446
25	37	930

Table 3. Continued.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
27	6	167
28	6	174
29	6	180
30	118	3,534
31	19	577
32	6	198
38	6	236
39	6	242
40	31	1,240
43	6	267
45	12	558
47	6	291
50	12	620
70	6	434
90	<u>12</u>	<u>1,116</u>
Totals ^{1/}	15,227	79,490

^{1/} Columns may not total precisely due to rounding.

Table 4. Estimated fishing pressure for steelhead in the Clearwater River drainage, 1980.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
1	1,321	1,321
2	1,116	2,232
3	874	2,623
4	620	2,480
5	546	2,728
6	279	1,674
7	180	1,259
8	198	1,587
9	74	670
10	459	4,588
11	19	205
12	93	1,116
14	56	781
15	180	2,697
16	19	298
17	12	211
18	19	335
20	161	3,224
21	6	130
22	6	136
23	6	143
24	12	298
25	19	465
30	81	2,418
40	12	496
47	6	291
50	6	310
90	12	1,116
Totals ^{1/}	6,392	35,830

^{1/} Columns may not total precisely due to rounding.

Table 5. Estimated fishing pressure for steelhead in the Salmon River, 1980.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
1	1,891	1,891
2	2,418	4,836
3	1,587	4,762
4	911	3,646
5	651	3,255
6	316	1,897
7	174	1,215
8	211	1,686
9	62	558
10	440	4,402
11	6	68
12	74	893
14	37	521
15	87	1,302
16	19	298
17	12	211
18	12	223
20	124	2,480
21	19	391
22	6	136
24	6	149
25	6	155
30	43	1,302
38	6	236
40	12	496
45	6	279
50	6	310
70	6	434
Totals ^{1/}	9,151	38,031

^{1/} Columns may not total precisely due to rounding.

Table 6. Estimated fishing pressure for steelhead in the Snake River, 1980.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
1	626	626
2	471	942
3	229	688
4	130	521
5	87	434
6	43	260
7	31	217
8	25	198
9	6	56
10	37	372
11	6	68
12	6	74
15	12	186
20	19	372
24	6	149
30	6	186
45	6	279
Totals ^{1/}	1,748	5,630

^{1/} Columns may not total precisely due to rounding.

Table 7. Estimated catch of steelhead by month and stream, 1980.

Stream	Jan.	Feb.	Mar.	Apr.	Sept.	Oct.	Nov.	Dec.	Unknown	Total
Lower Clearwater	SEASON CLOSED					543	829	451	67	1,889
Upper Clearwater						0	15	15	5	36
N. Fk. Clearwater						15	20	56	0	92
Clearwater (Unknown)						36	36	41	41	154
Subtotal						594	900	563	113	2,171
Salmon-1	10	36	0	SEASON CLOSED	10	282	174	102	36	650
Salmon-2	10	26	10		5	195	133	97	15	492
Salmon-3	26	36	82		10	563	307	67	31	1,121
Salmon-4	0	15	230		5	517	384	26	51	1,229
Salmon-5	20	15	369		36	993	696	169	143	2,442
Salmon-6	0	15	77		0	46	51	20	0	210
Salmon (Unknown)	0	15	10		0	61	102	61	36	287
Subtotal	66	158	778		66	2,657	1,847	542	312	6,431
Lower Snake	← SEASON CLOSED →				0	51	230	67	10	358
Upper Snake	15	15	0	15	0	26	15	0	10	97
Snake (Unknown)	0	0	0	0	0	10	31	5	0	46
Subtotal	15	15	0	15	0	87	276	72	20	502
Totals ^{1/}	81	173	778	15	66	3,338	3,023	1,177	445	9,103

^{1/} Columns may not total precisely due to rounding.

Table 8. Catch of steelhead by resident and nonresident anglers, 1980.

Stream	Resident anglers		Nonresident anglers	
	Number of fish	Percent	Number of fish	Percent
Clearwater River drainage	1,802	83.0	369	17.0
Salmon River	5,279	82.1	1,152	17.9
Snake River	<u>404</u>	<u>80.5</u>	<u>97</u>	<u>19.3</u>
Totals	7,485	82.2	1,618	17.8

Table 9. Idaho salmon and steelhead catch estimates, 1954-1980.

Year	Chinook salmon catch estimate	Steelhead trout catch estimate
1954	15,000	12,000
1955	19,000	13,000
1956	21,000	8,000
1957	39,000	20,000
1958	24,000	30,000
1959	20,000	31,000
1960	21,000	30,000
1961	13,000	25,000
1962	12,000	19,000
1963	12,000	26,000
1964	8,000	18,000
1965	SEASON CLOSED	20,000
1966	8,500	20,000
1967	6,500	22,500
1968	10,000	23,000
1969	11,500	15,500
1970	5,500	20,500
1971	3,500	17,500
1972	6,500	13,500
1973	9,500	10,500
1974	1,500	3,000
1975	SEASON CLOSED	SEASON CLOSED
1976	SEASON CLOSED	2,000
1977	3,500	13,000
1978	7,000	11,500
1979	SEASON CLOSED	5,500
1980	SEASON CLOSED	9,000

Table 10. Estimated steelhead harvest by fish run year, 1972-1980 (fish run year is calculated from 1 August to 31 July).

Stream or section	Fish run year							
	1972-73	73-74	74-75	75-76	76-77	77-78	78-79	79-80
Salmon-1	1,296	--	--	C.S. ^{1/}	627	837	C.S.	340
Salmon-2	1,345	--	--	C.S.	353	1,039	C.S.	257
Salmon-3	938	--	--	C.S.	354	1,055	C.S.	342
Salmon-4	1,149	--	--	C.S.	710	1,718	C.S.	548
Salmon-5	1,183	--	--	C.S.	711	2,886	162	1,024
Salmon-6	76	--	--	C.S.	91	130	136	124
Salmon-7	15	--	--	C.S.	25	12	C.S.	8
Salmon-8	21	--	--	C.S.	12	40	C.S.	C.S.
Salmon unknown							12	168
Salmon total	5,963	N/A ^{2/}	N/A	0	2,883	7,717	310	2,811
S.F. Salmon	61	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.
M.F. Salmon	27	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.
Other Salmon tribs.	42	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.
Lower Clearwater	5,721	--	--	C.S.	C.S.	--	1,921	C.S.
Upper Clearwater	736	--	--	C.S.	C.S.	--	253	C.S.
Clearwater unknown							125	
Clearwater total	6,457	N/A	N/A	0	0	14,157 ^{3/}	2,299	0
N.F. Clearwater	23	--	--	C.S.	0	--	484	C.S.
M.F. Clearwater	118	--	--	C.S.	0	0	C.S.	C.S.
Other Clearwater tribs.	10	--	--	C.S.	0	0	C.S.	C.S.
Lower Snake	2,540	--	--	C.S.	96	--	C.S.	17
Upper Snake	354	--	--	C.S.	50	--	C.S.	71 ^{4/}
SNAKE total	2,894	N/A	N/A	0	146	1,540	0	96 ^{4/}
Unknown streams	219	N/A	N/A	C.S.	66	50	3	4
State totals	15,814	8,128	726	0	3,095	23,414	3,096	2,911

^{1/} C.S. denotes closed season.

^{2/} N/A denotes data not available.

^{3/} Includes mainstem Clearwater and North Fork Clearwater.

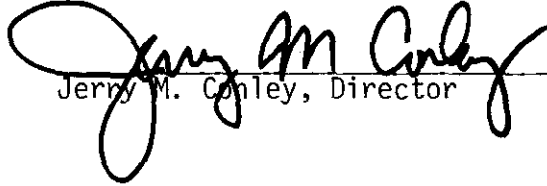
^{4/} Includes 8 steelhead from undesignated section of Snake.

Submitted by:

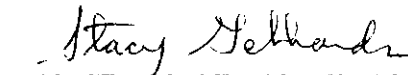
David W. Ortmann
Fishery Research Supervisor

Approved by:

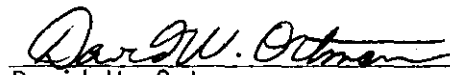
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Jerry M. Conley, Director



Stacy Gebhards, Chief
Bureau of Fisheries



David W. Ortmann
Fishery Research Supervisor
Bureau of Fisheries